

Figure 1

A. Rig open reading frame nucleotide sequence

atgccggaacagagtaacgattaccgcgtggtggtgttcggggcggcggtgggcaag
agtcgctggtgctcgcttcgtgaaagggcacgttcgcgcgacacctacatccccaccatc
gaggacacctaccggcaggtgatcagctgcgacaagagcgtGtgacgctgcagatcaca
gacaccacggcagccaccagttcccgccatgcagcgcctgtccatctccaagggccac
gccttcacctggttctccgtcaccagcaagcagtcgctggaggagctggggcccatc
tacaagctcatcgtgcagatcaaggcagcgtggaggacatccccgtgatgctcgtgggc
aacaagtgcgatgagacgcagcgggaggtggacacgcgcgagggcagggcggtggcccag
gagtggaaagtgcgcttcatggagacctcggccaagatgaactacaacgtcaaggagctc
ttccaggagctgctgacgctggagacgcgcgggaacatgagcctcaacatcgacggcaag
cgctccgggaagcagaagaggacagaccgcgtcaaggggcaaatgcaccctcatgtga

B. Rig amino acid sequence

MPEQSN DYRVVVFAGGVGKSSLVLR FVKGTRD TYIPTIEDTYRQVISCD
KSVCTLQITD TTGSHQFPAMQRLSISKGHAFILVFSVT SKQSLEELGPIYKLIV
QIKGSVEDIPVMLVGNKCDETQREVD TREAQAVAQEWKCAFMETSAKMN
YNVKELFQELLTLETRRNMSLNIDGKRS GKQKRTDRVK GKCTLM

Figure 2

Rig	mpegsndyrvvvf-----	13
Noey2	mgnasfgskeqkllkrlrlpallilrafkphrkirdyrvvvv-	43
RalA	maankpkgqnsalalhkvimv-----	20
Rap1A	mreyklvvl-----	9
Rap2A	mreykvvv-----	9
HRas	mteyklvv-----	9
RRas	mssgaasgtgrgrprggpgpgdpppsethklvv-----	35
Rheb	mpqsksrkiail-----	12
Rig	GAGGVGKSS lvlrfvkgtfdrdtYIPTIEDTYrqviscdksvctl	57
Noey2	G TAGVGKSTllhkwasgnfrheYLPTIENTYcqllgcshgvlsl	87
RalA	G SGGVGKSAltIqfmydefvedYEPTKADSYrkkvldgeevqi	64
Rap1A	G SGGVGKSAltVqfvqgifvekYDPTIEDSYrkqvevdccqcm	53
Rap2A	G SGGVGKSAltVqfvgtgfiekYDPTIEDFYrkeievdsspsvl	53
HRas	G AGGVGKSAltIqlqnhfvdeYDPTIEDSYrkqvvidgetccl	53
RRas	G GGGVGKSAltIqfiqsyfvsdYDPTIEDSYtkicsvdgiparl	79
Rheb	G YRSVGKSSltIqfvegqfvdsYDPTIENTFtklitvngqeyhl	56
Rig	qitDTTGSHQfpamqrslsiskghafilvsvtskqsleelgpiy	101
Noey2	hitDSKSGDGNralqrhviarghafvlvysvtkketleelkafy	131
RalA	dilDTAGQEDyaaairdnyfrsgegflcvfsitemesfaatadfr	108
Rap1A	eilDTAGTEQftamrdlymkngggfalvysitaqstfndlqdlr	97
Rap2A	eilDTAGTEQfasmrdlyikngggfilvyslvnqgsfqdikpmr	97
HRas	dilDTAGQEEysamrdqymrtgegflcvfainntksfedihqyr	97
RRas	dilDTAGQEEfgamreqymraghgflfvfaindrqsfnegvklf	123
Rheb	qlvDTAGQDEysifpqtysidingyilvsvtsiksfevikvih	100
Rig	klivqikgsvedipvmlvg-----NKCDetqrevdtreaqav	138
Noey2	elickikgnnlhkfpivlv-----NKSDdthrevalndgatc	169
RalA	eqilrvkedenvpfllv-----NKSDledkrqvsveeakn	144
Rap1A	eqilrvkdtedvpmlvg-----NKCDledervvgkeggqn	133
Rap2A	dqiirvkryekvpvmlvg-----NKVDleserevsssegra	133
HRas	eqikrvkdsddvpmlvg-----NKCDlaartvesrqagdl	133
RRas	tqilrvkdrddfpvmlvg-----NKADlesqrqvprseasa	159
Rheb	gklldmvgkvqipimlv-----NKKDLhmervisyeegka	136
Rig	agewkcafm---ETSakmnynvkelfqelltletrrnmslnidg	179
Noey2	amewncafm---EISaktvvnvgelfhmllnykkkpttqlgepe	210
RalA	raeqwnvnyv---ETSaktranvdkvffdlmreirarkmedskek	186
Rap1A	larqwcncabl-ESSAkskinvneifydlvrqinrktpekkkp	176
Rap2A	laewgcpfm---ETSaksktmvdelfaeivrqmnyaaqpdkddp	175
HRas	arsygipyi---ETSaktrggvedafytlvreirqhklrklhpp	174
RRas	fgashhvayf---EASaklrlnvdeafeqlvravrkyyqegelpps	201
Rheb	laeswnaaf1-ESSakenqtavdvfrriileakmdgaasqgk	178
Rig	krsgkqkrtdrvkgk-----//----CTLM	198
Noey2	kksqmpntteklldk-----//----CIIM	229
RalA	ngkkkrkslakrirer-----//----CCIL	206
Rap1A	kkks-----//----CLLL	184
Rap2A	ccsa-----//----CNIQ	183
HRas	desgpgcmsck-----//----CVLS	189
RRas	ppsaprkkgggcp-----//----CVLL	218
Rheb	ss-----//----CSVM	184

Figure 3

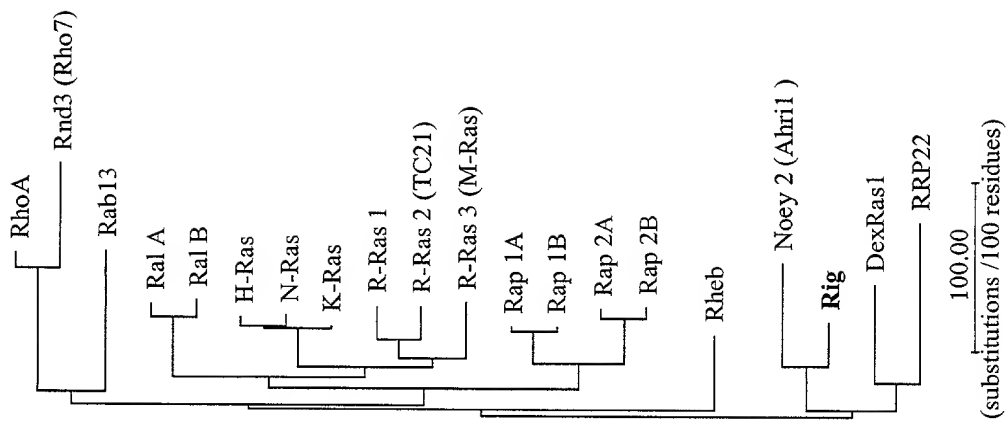
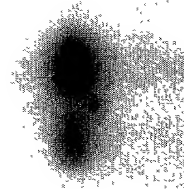


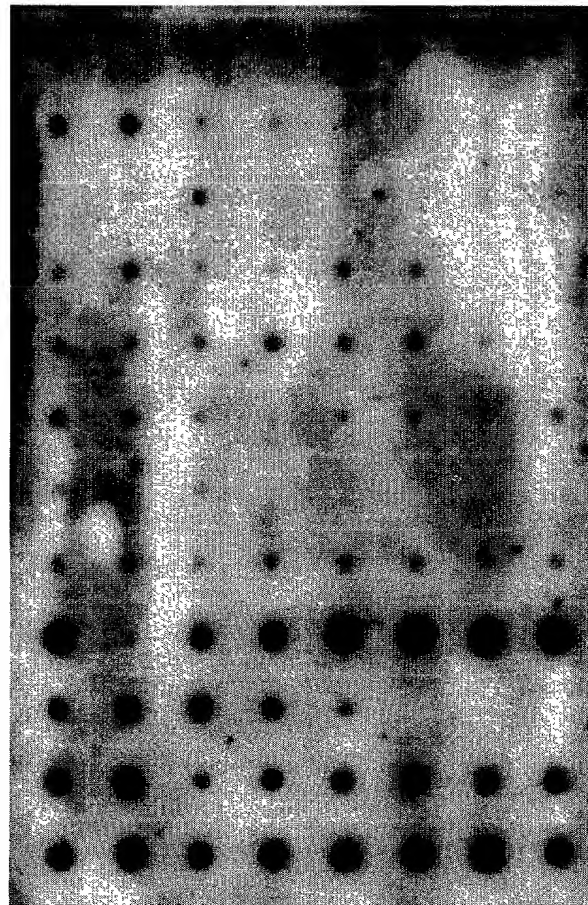
Figure 4

(A)



brain
heart
sk mus
colon
thymus
spleen
kidney
liver
sm int
placenta
lung
pbl

(B)



(C)

	1	2	3	4	5	6	7	8	9	10	11	12
A	whole brain	cerebellum, left	substantia nigra	heart	esophagus	colon, transverse	kidney	lung	liver	leukemia, HL-60	fetal brain	yeast total RNA
B	cerebral cortex	cerebellum, right	nucleus accumbens	aorta	stomach	colon, descending	skeletal muscle	placenta	pancreas	Hela S3	fetal heart	yeast tRNA
C	frontal lobe	corpus callosum	thalamus	atrium, left	duodenum	rectum	spleen	bladder	adrenal gland	leukemia, K-562	fetal kidney	E. coli rRNA
D	parietal lobe	amygdala	pituitary gland	atrium, right	jejunum		thymus	uterus	thyroid gland	leukemia, MOLT-4	fetal liver	E. coli DNA
E	occipital lobe	caudate nucleus	spinal cord	ventricle, left	ileum		peripheral blood leukocyte	prostate	salivary gland	Burkitt's lymphoma, Raji	fetal spleen	poly (rA)
F	temporal lobe	hippo-campus		ventricle, right	ileocecum		lymph node	testis	mammary gland	Burkitt's lymphoma, Daudi	fetal thymus	human Cg1-1 DNA
G	p. g. of cerebral cortex	medulla oblongata		inter-ventricular septum	appendix		bone marrow	ovary		colorectal adenocarcinoma, SW480	fetal lung	human DNA 100 ng
H	pons	putamen		apex of the heart	colon, ascending		trachea			lung carcinoma, A549		human DNA 500 ng

* paracentral gyrus

Figure 5

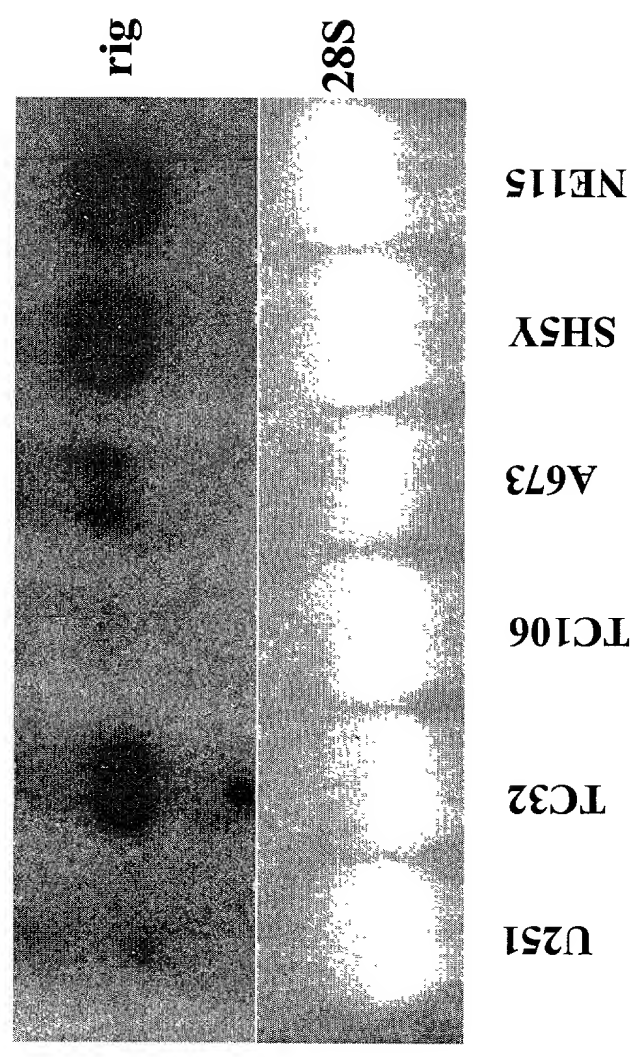


Figure 6

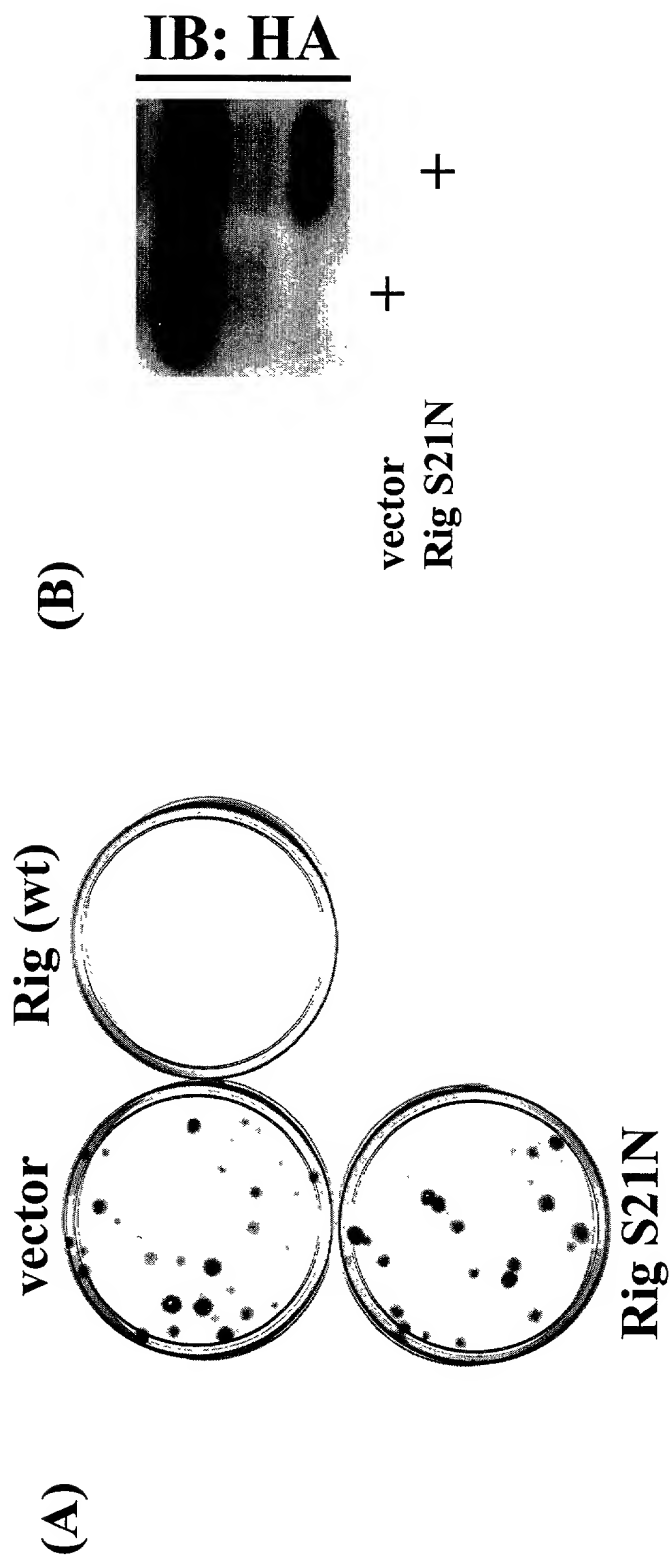


Figure 7

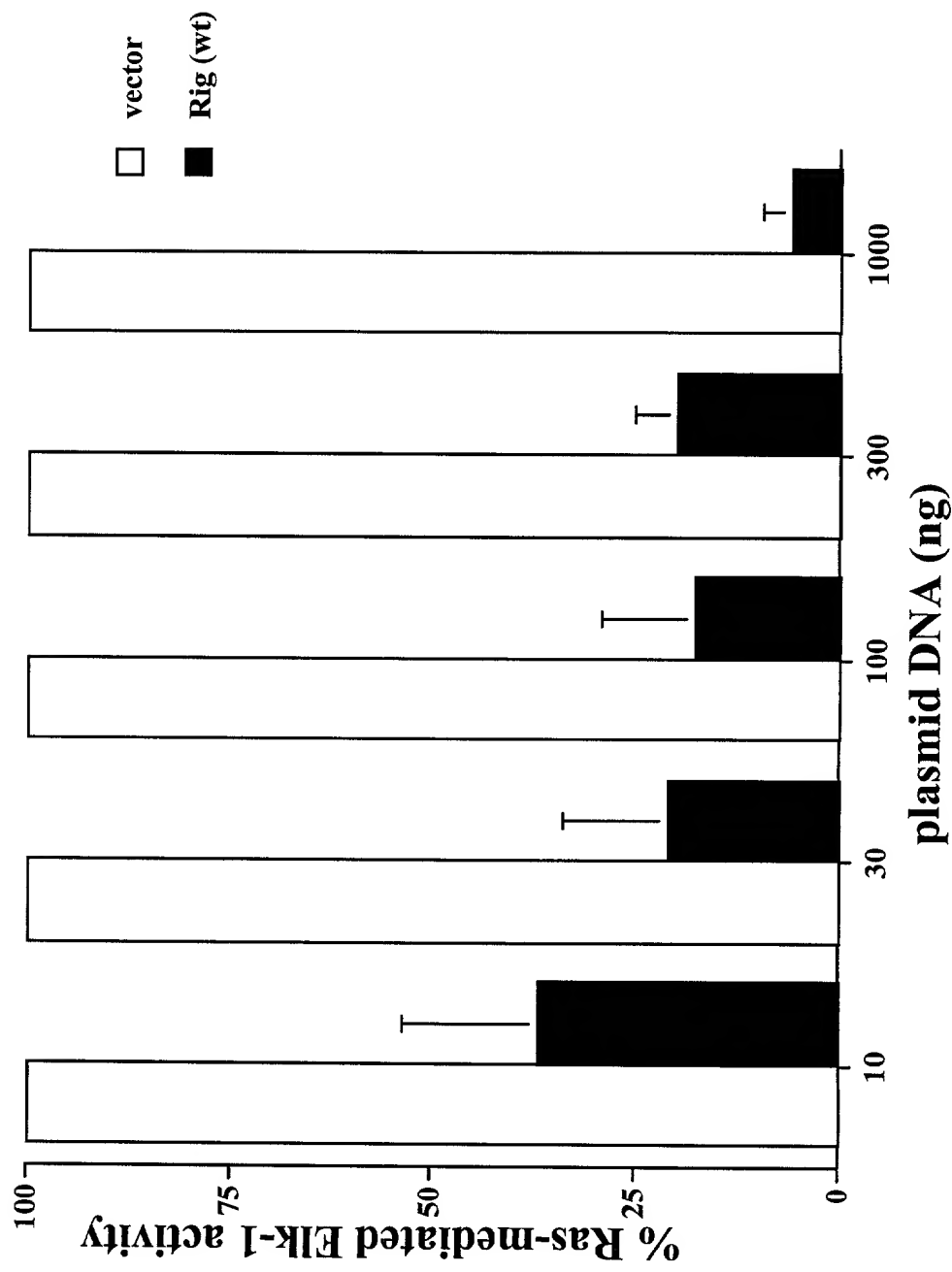


Figure 8

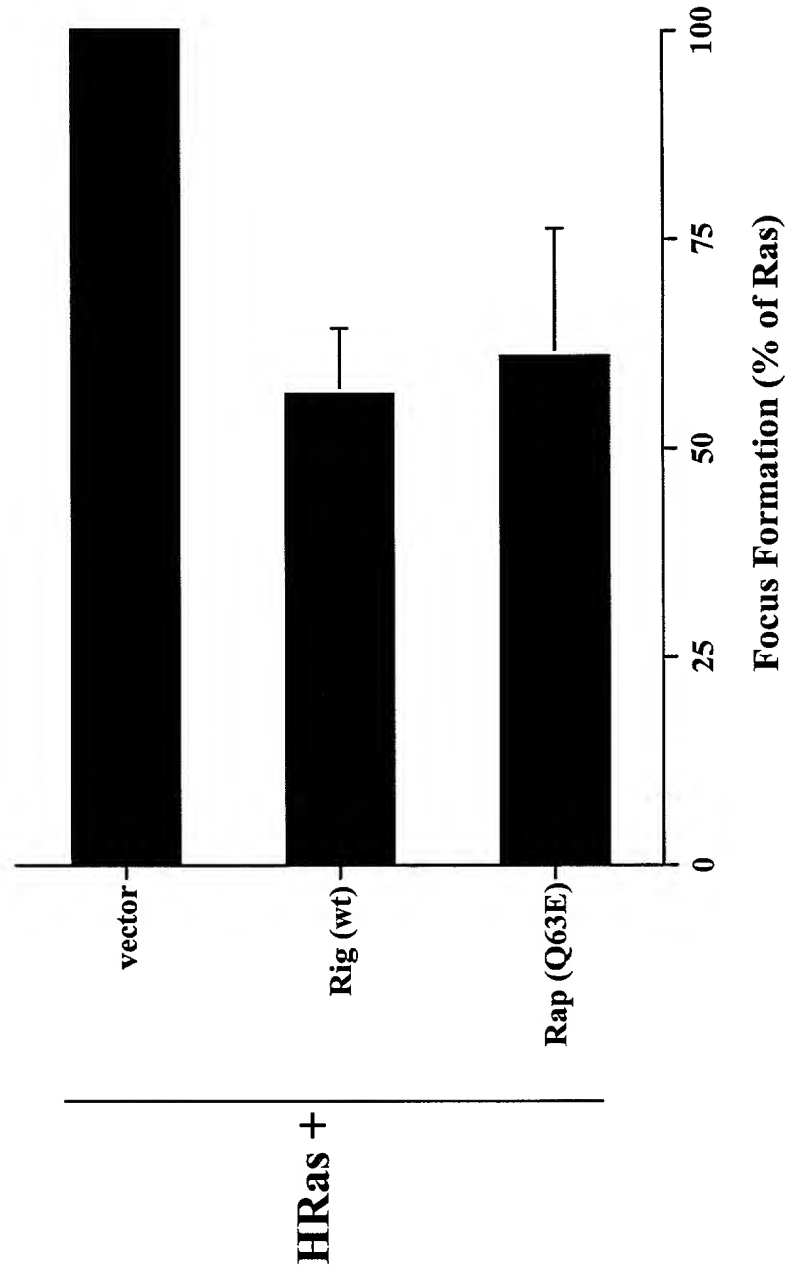


Figure 9

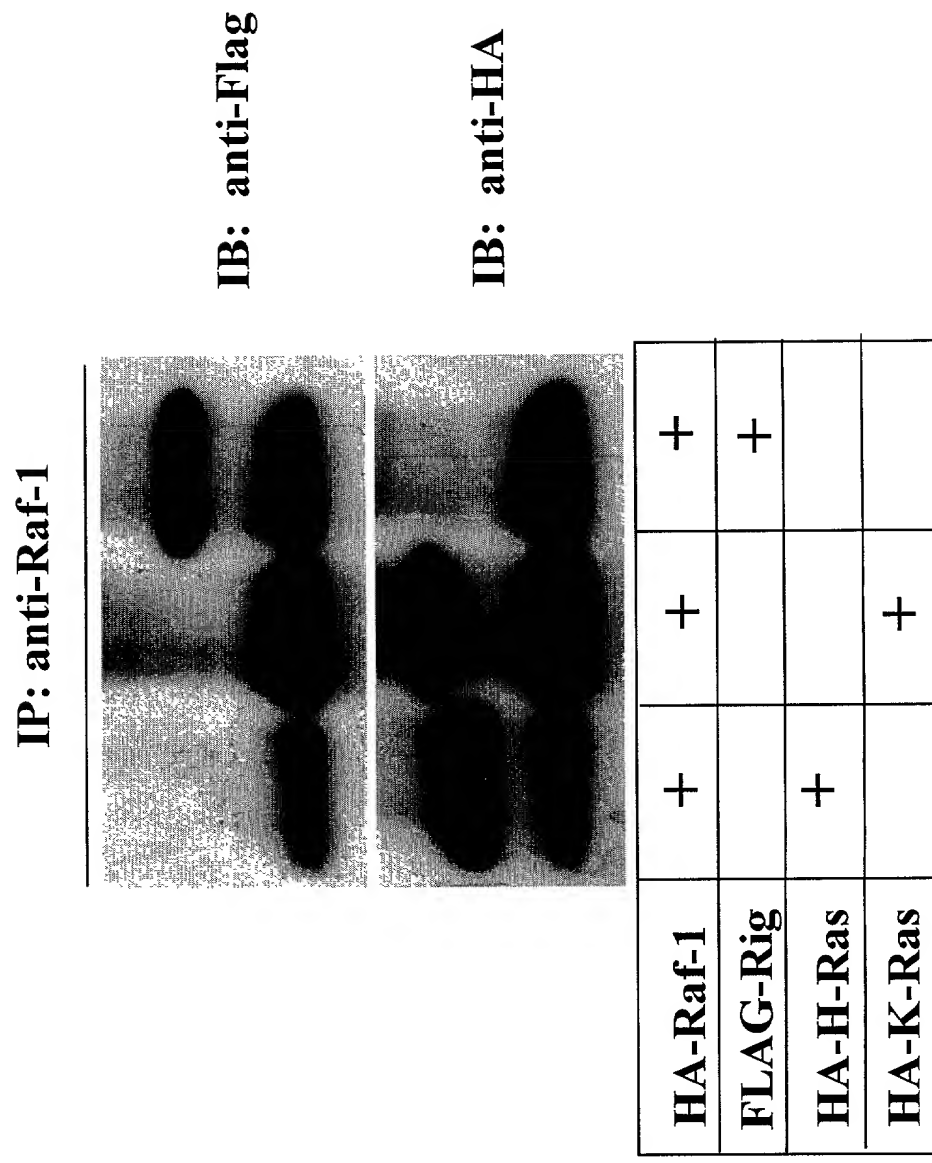


Figure 10

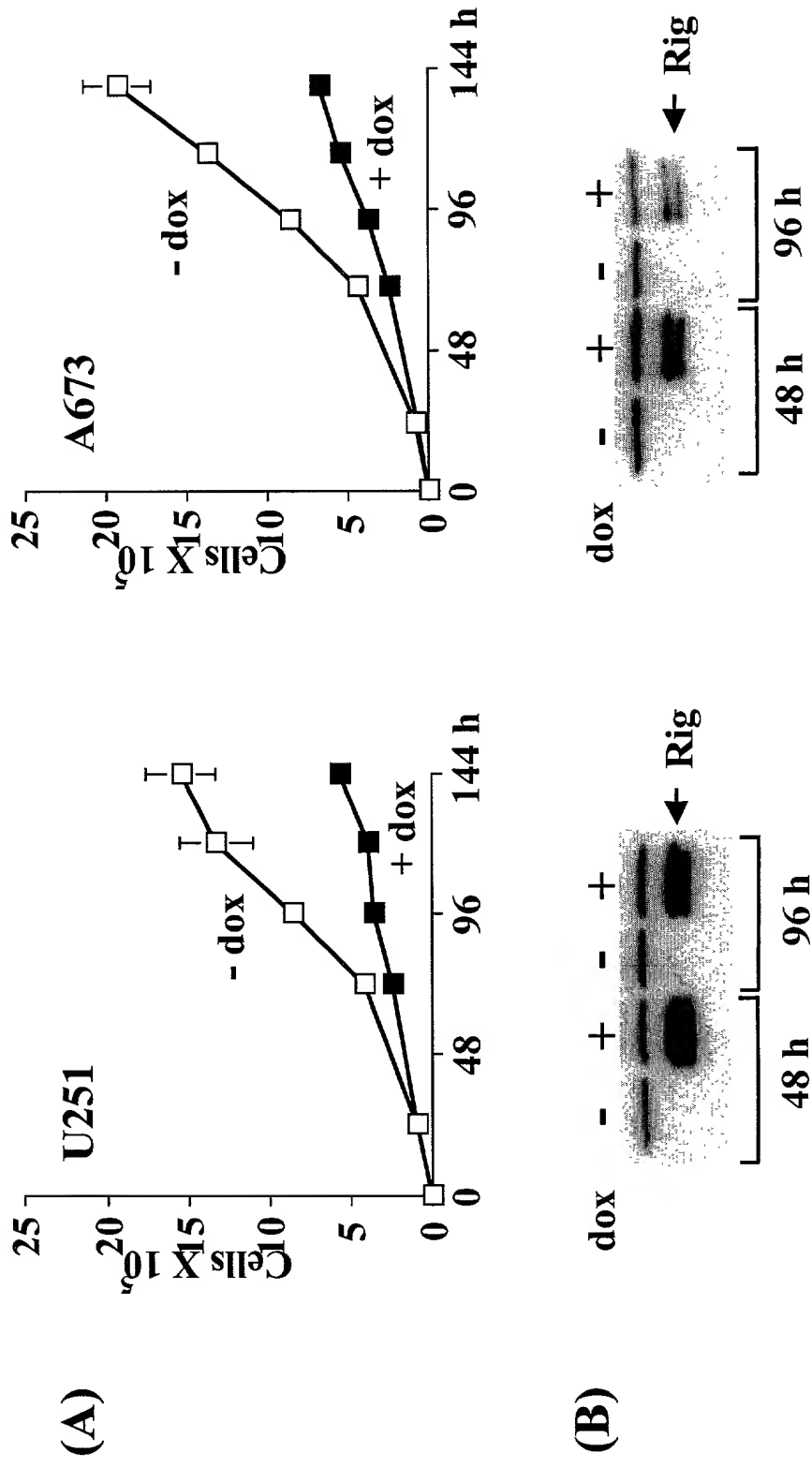


Figure 11

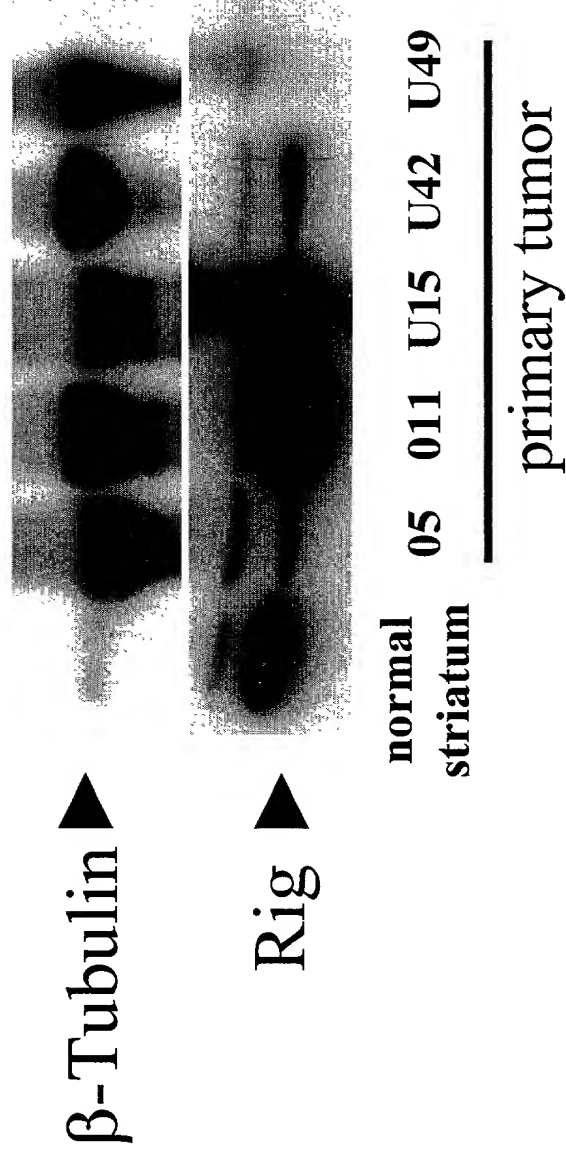


Figure 12

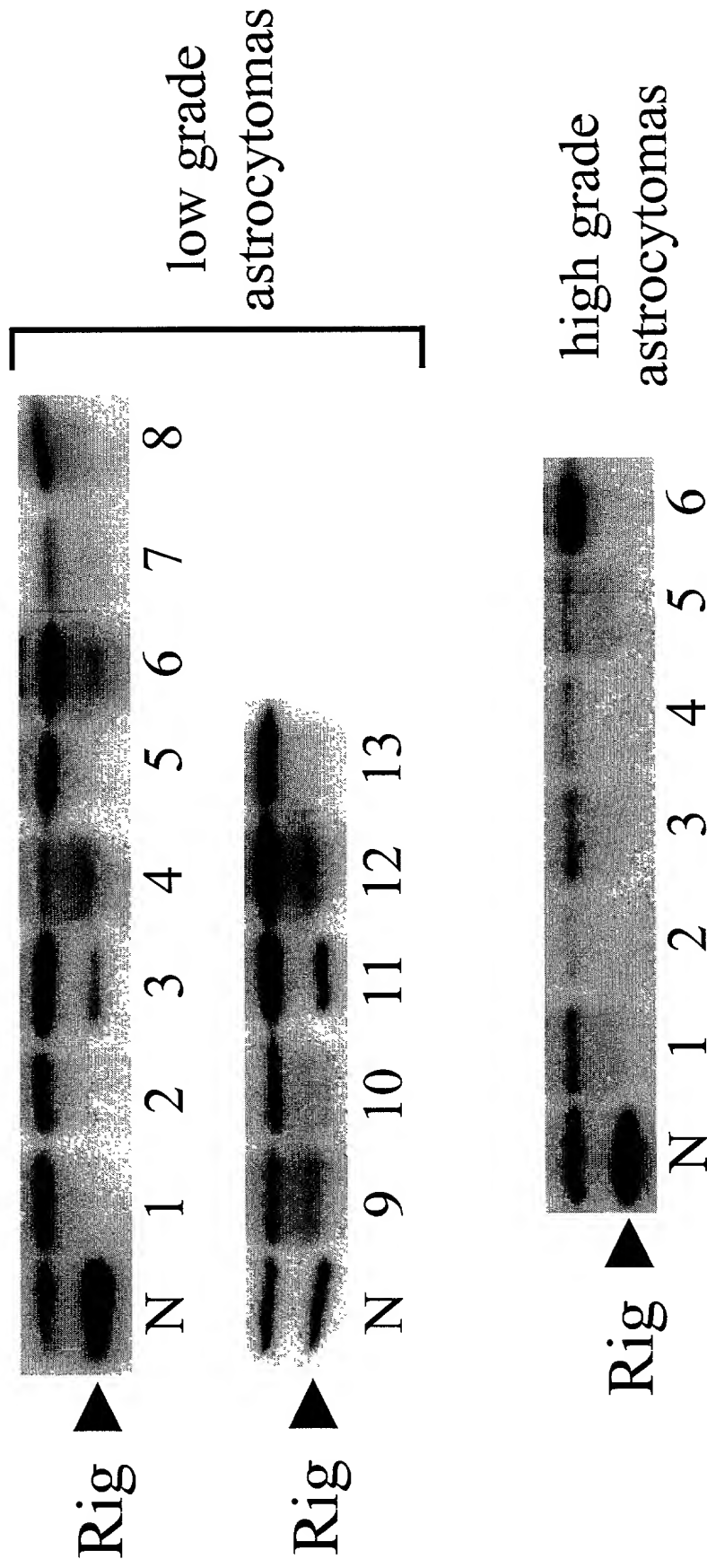


Figure 13

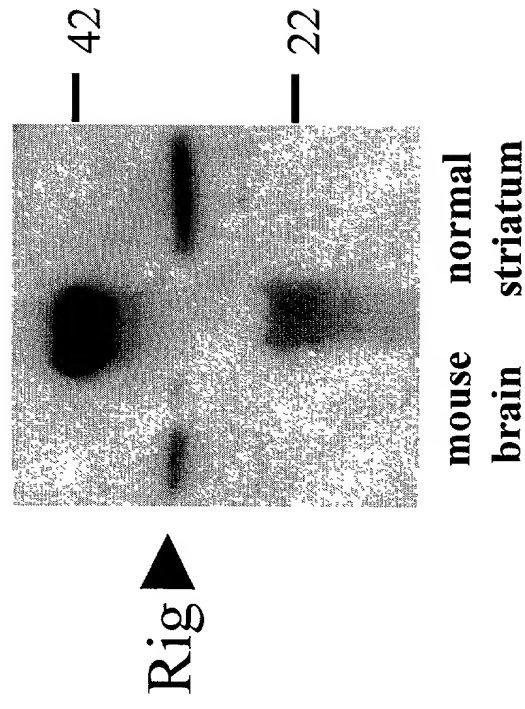


Figure 14

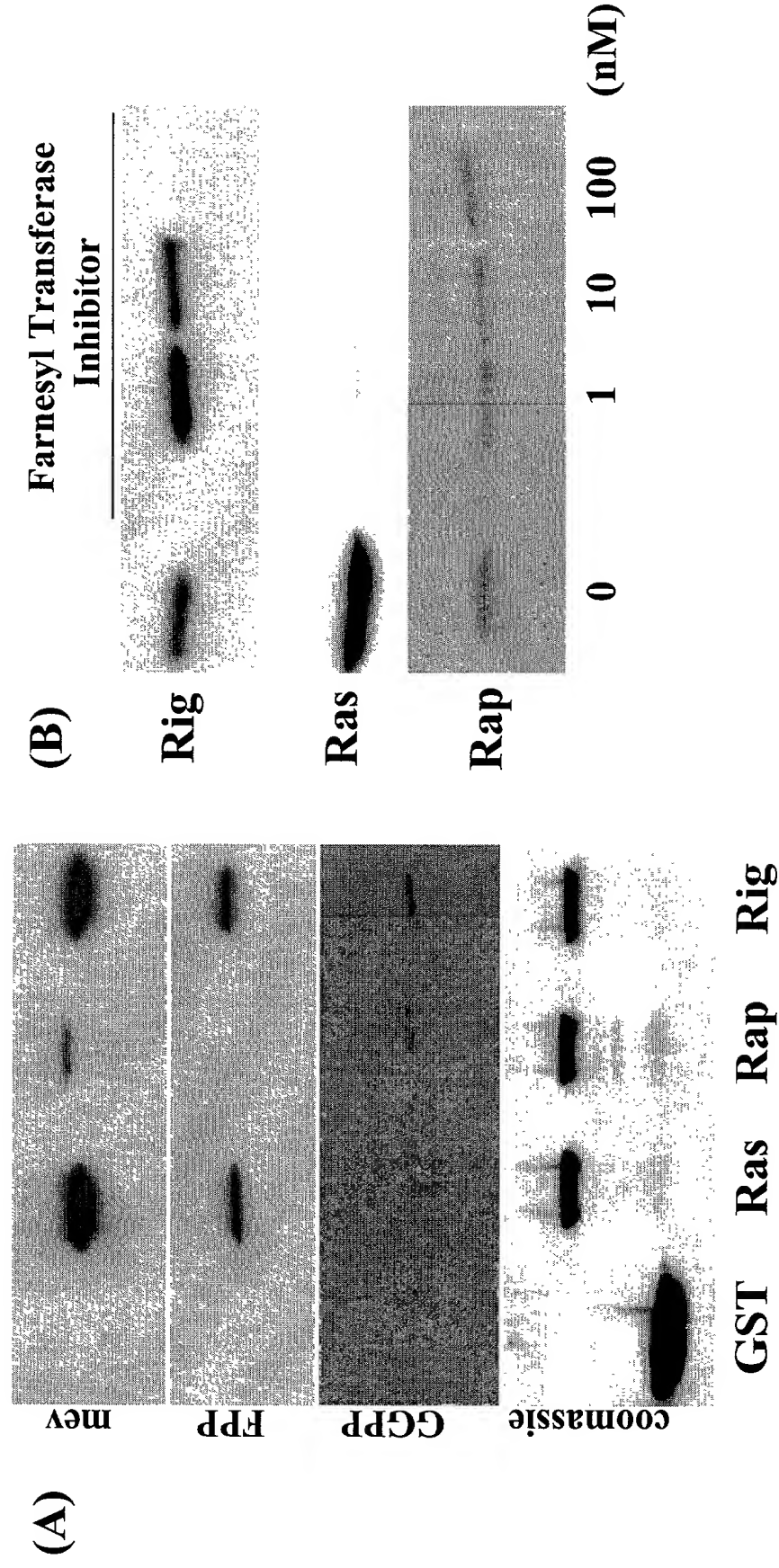


Figure 15

